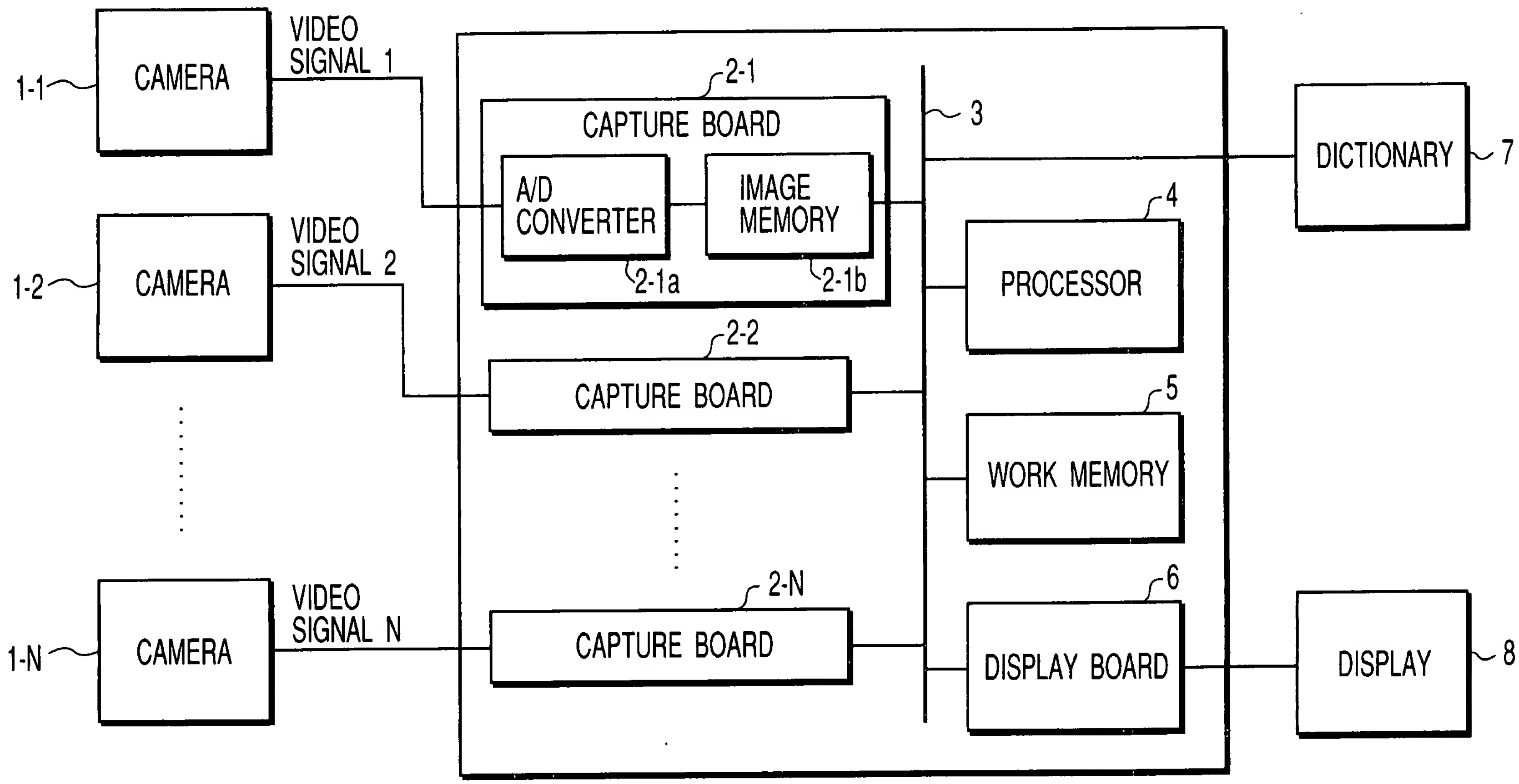

CAMERA
CAMERA
CAMERA
1-1
1-2
1-N
VIDEO SIGNAL 1
VIDEO SIGNAL 2
VIDEO SIGNAL N
CAPTURE BOARD
2-1
A/D CONVERTER
2-1a
IMAGE MEMORY
2-1b
CAPTURE BOARD
2-2
CAPTURE BOARD
2-N
3
PROCESSOR
4
WORK MEMORY
5
DISPLAY BOARD
6
DICTIONARY
7
DISPLAY
8

F I G. 1

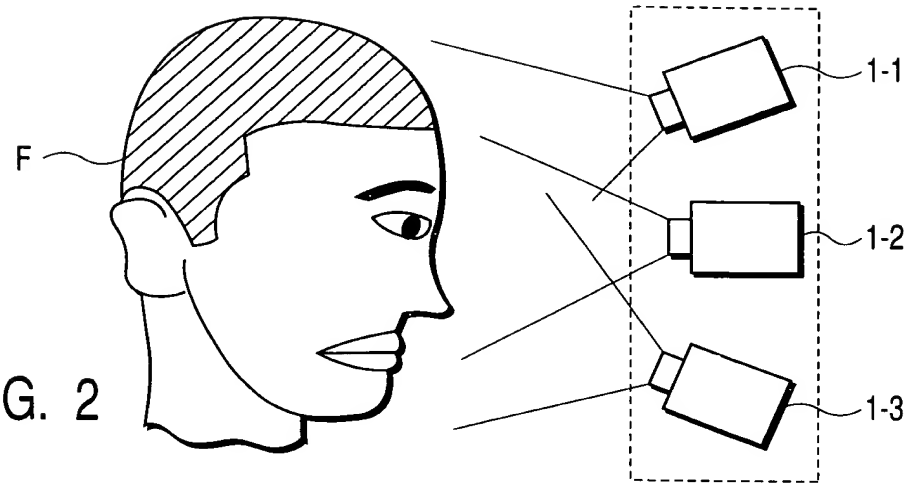


FIG. 2

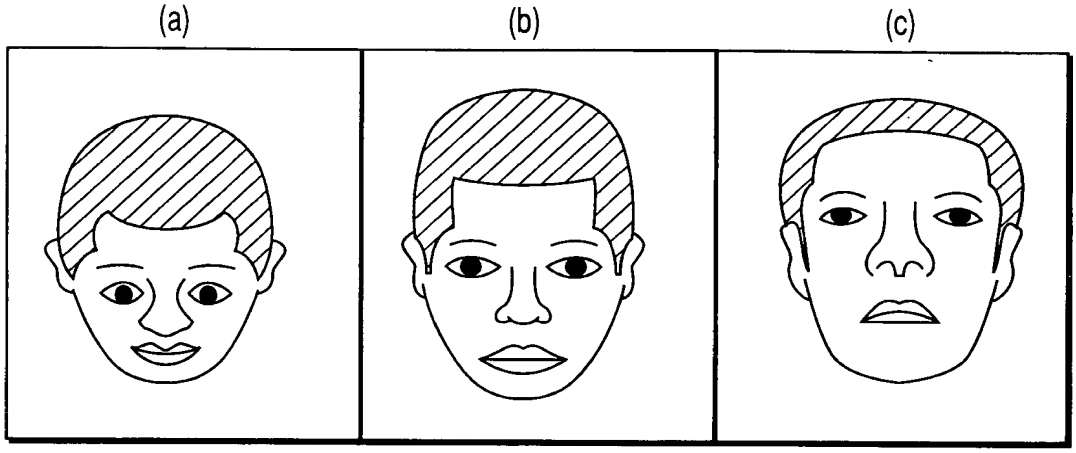
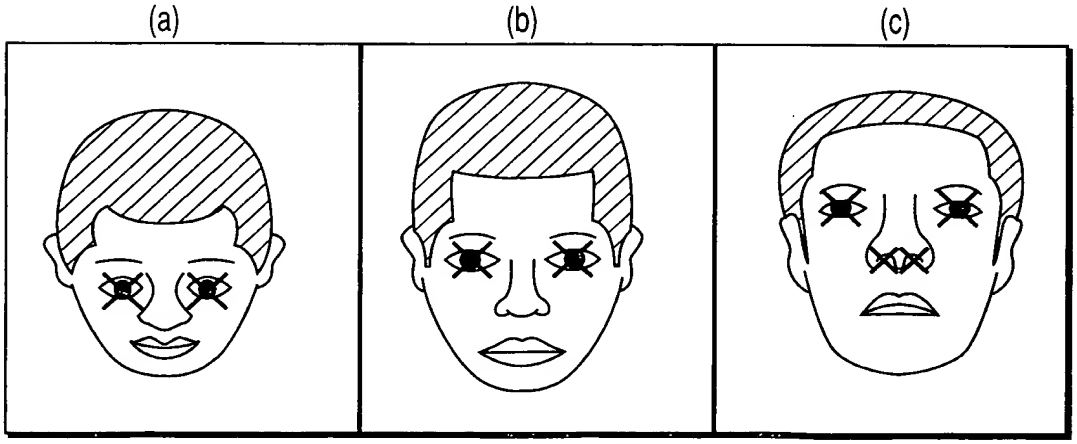


FIG. 3



X: FEATURE POINT

FIG. 5

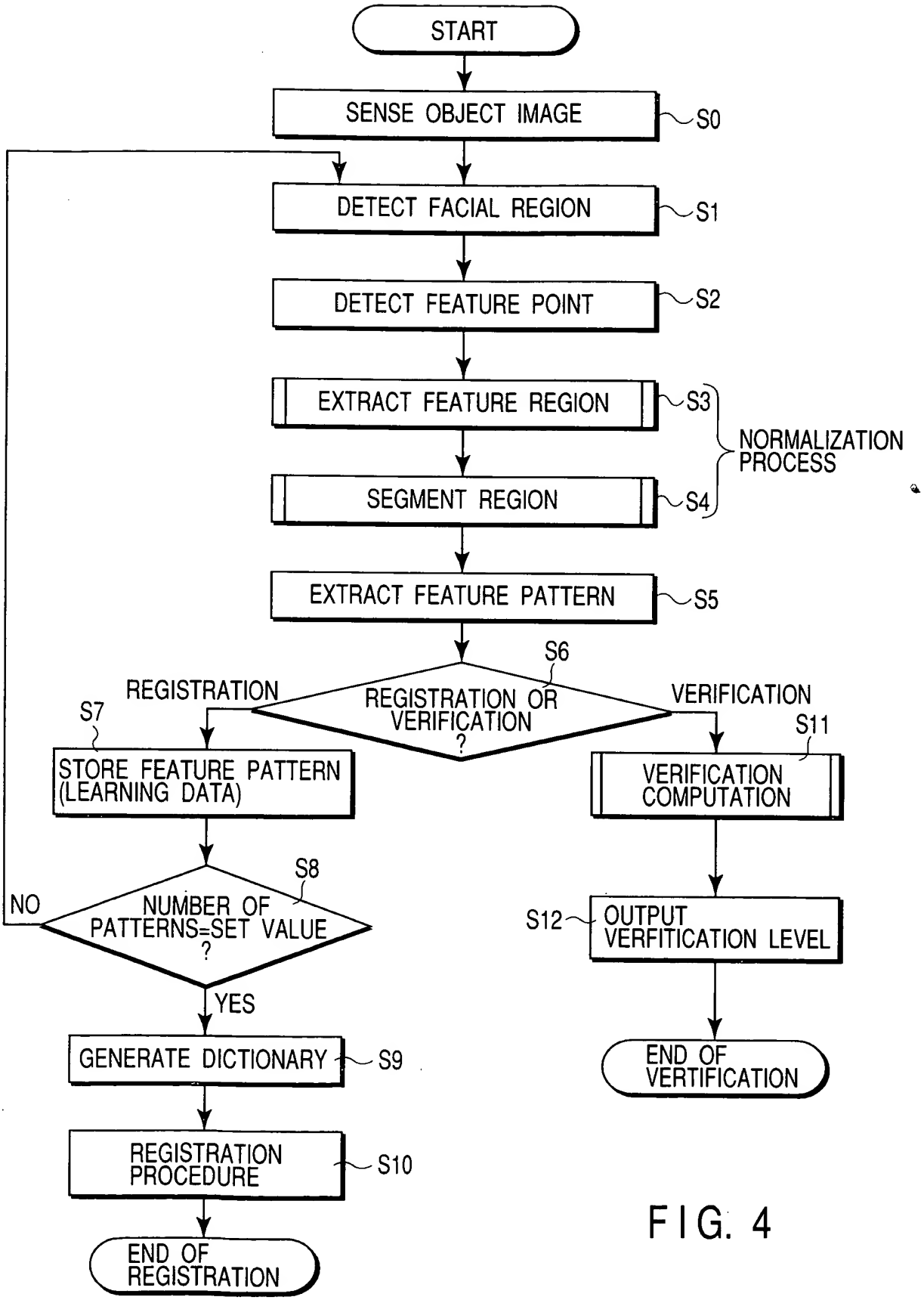

START
SENSE OBJECT IMAGE
S0
DETECT FACIAL REGION
S1
DETECT FEATURE POINT
S2
EXTRACT FEATURE REGION
S3
SEGMENT REGION
S4
NORMALIZATION PROCESS
EXTRACT FEATURE PATTERN
S5
S6
REGISTRATION OR VERIFICATION ?
REGISTRATION
VERIFICATION
S7
STORE FEATURE PATTERN (LEARNING DATA)
S8
NUMBER OF PATTERNS=SET VALUE ?
NO
YES
GENERATE DICTIONARY
S9
REGISTRATION PROCEDURE
S10
END OF REGISTRATION
S11
VERIFICATION COMPUTATION
S12
OUTPUT VERFITICATION LEVEL
END OF VERTIFICATION

FIG. 4

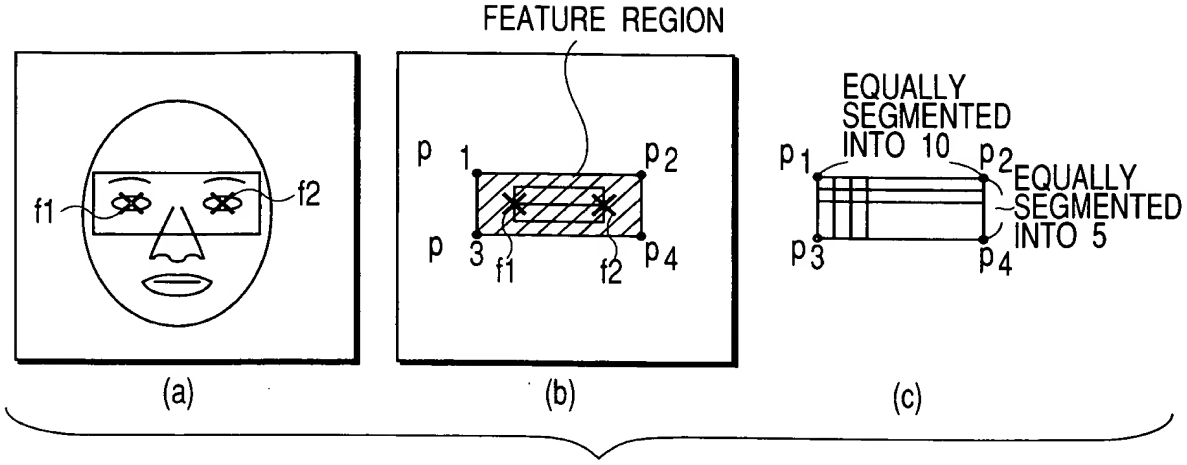


FIG. 6

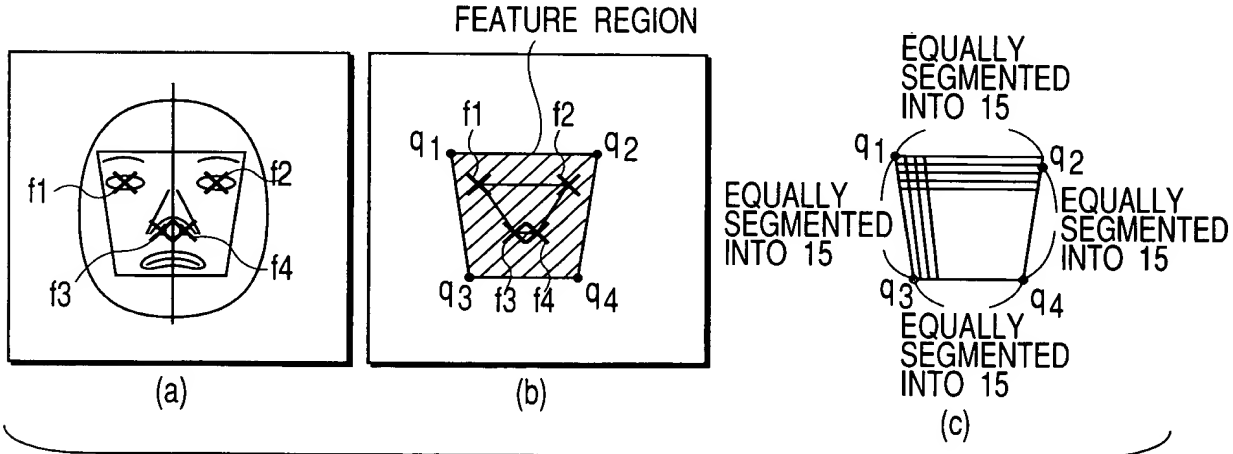


FIG. 7

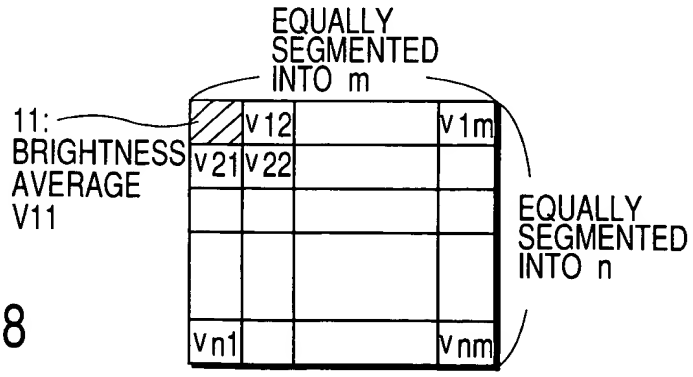


FIG. 8

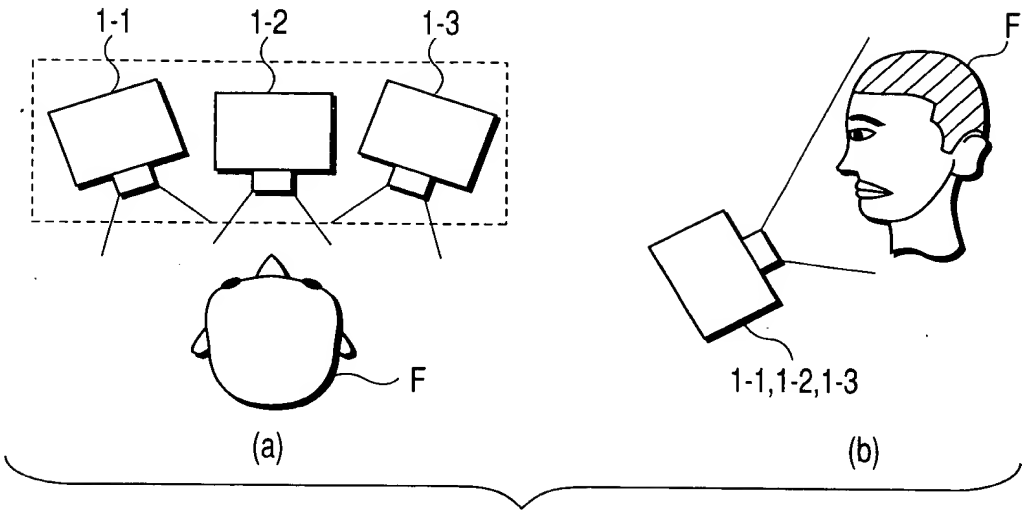


FIG. 9

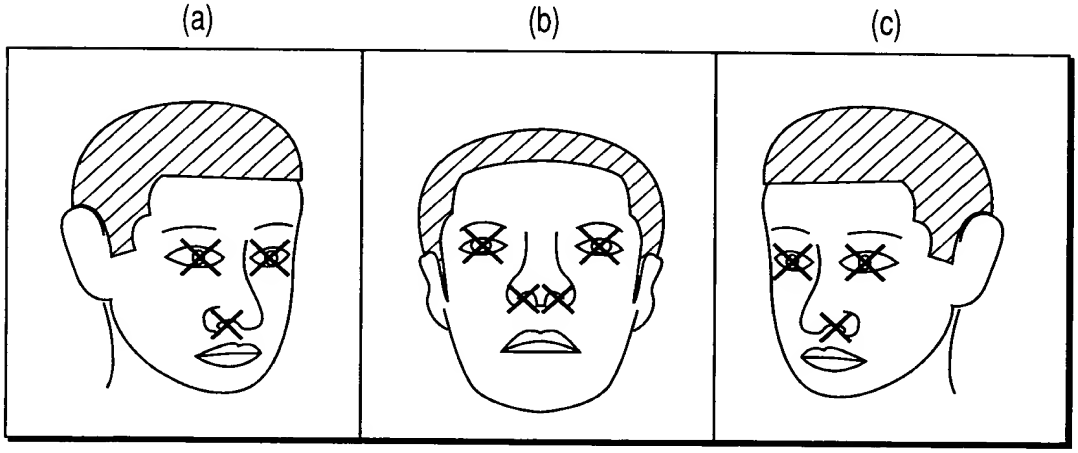


FIG. 10

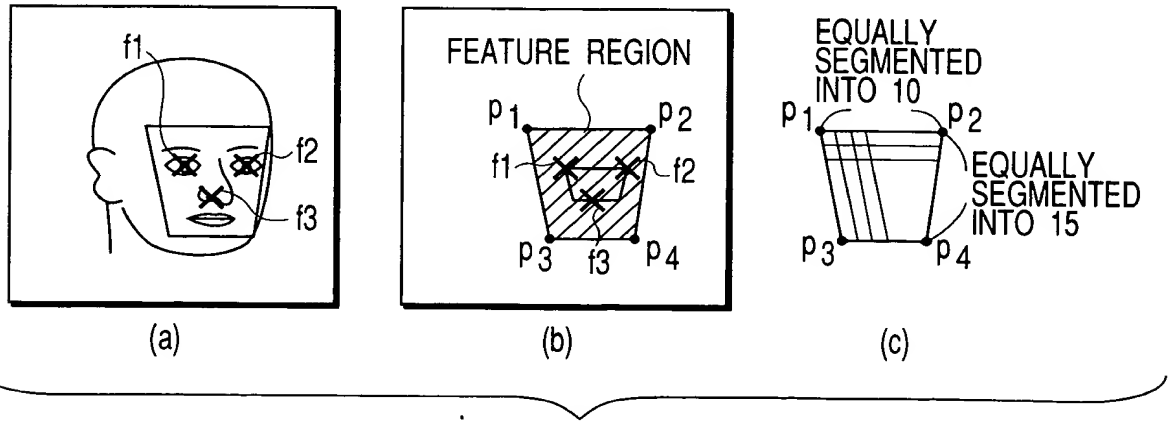


FIG. 11

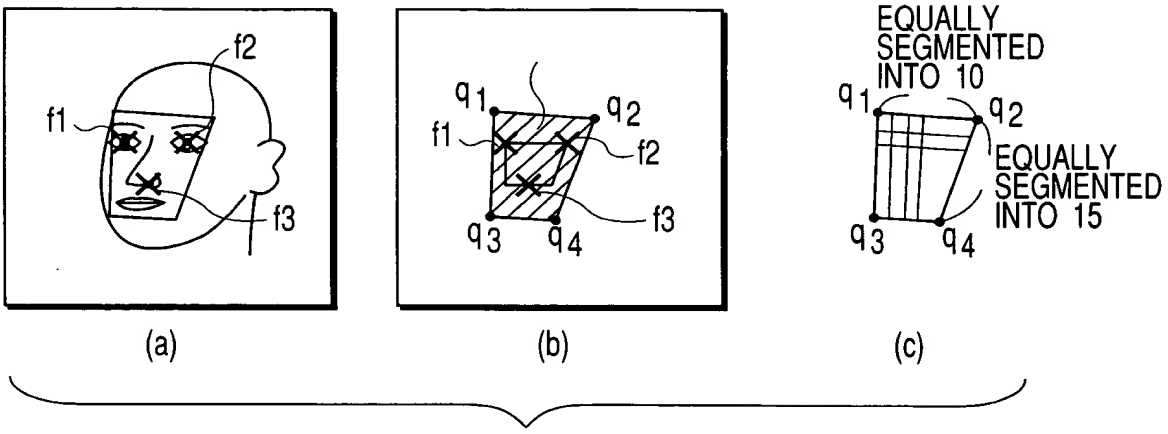


FIG. 12

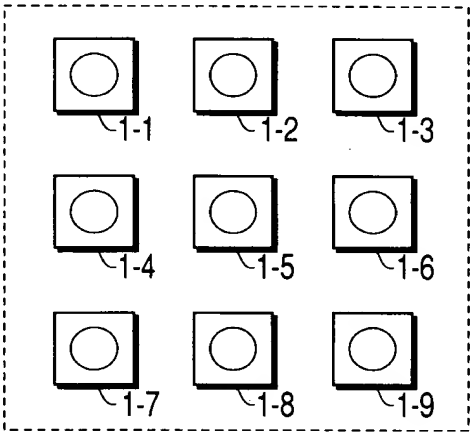


FIG. 13

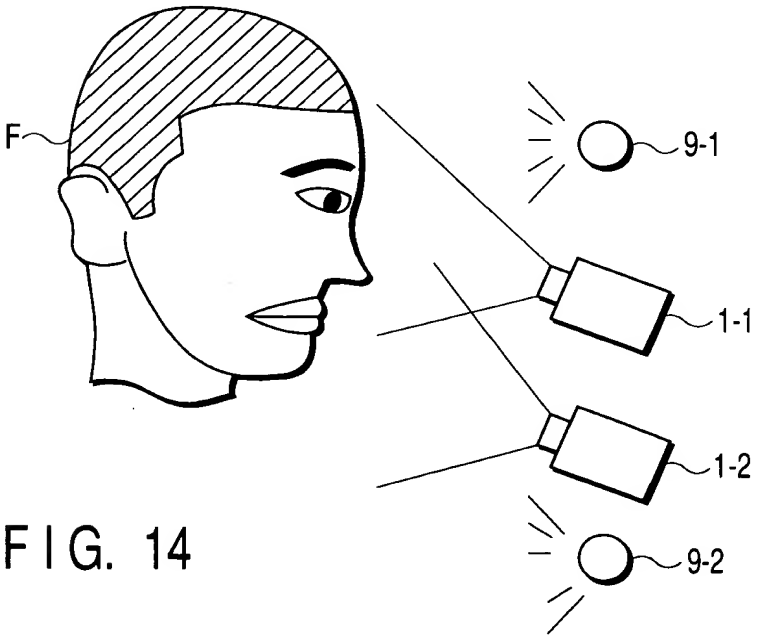


FIG. 14

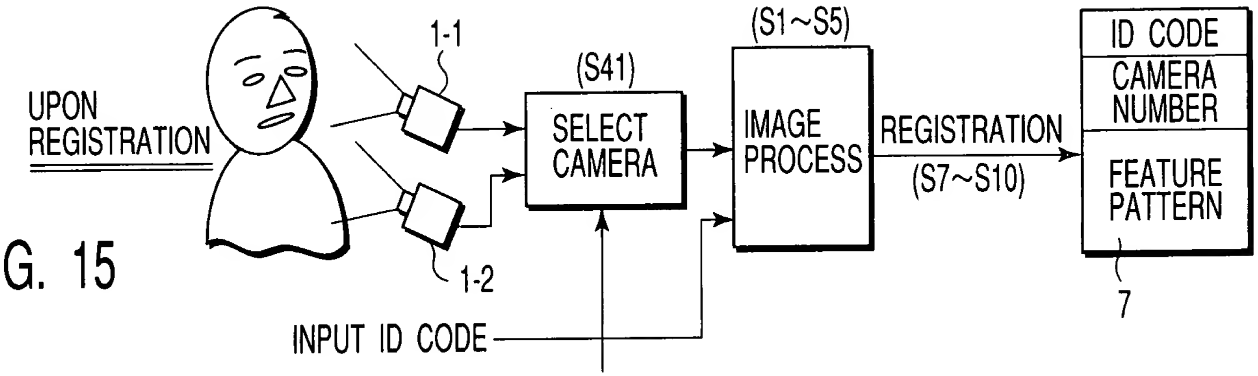


FIG. 15

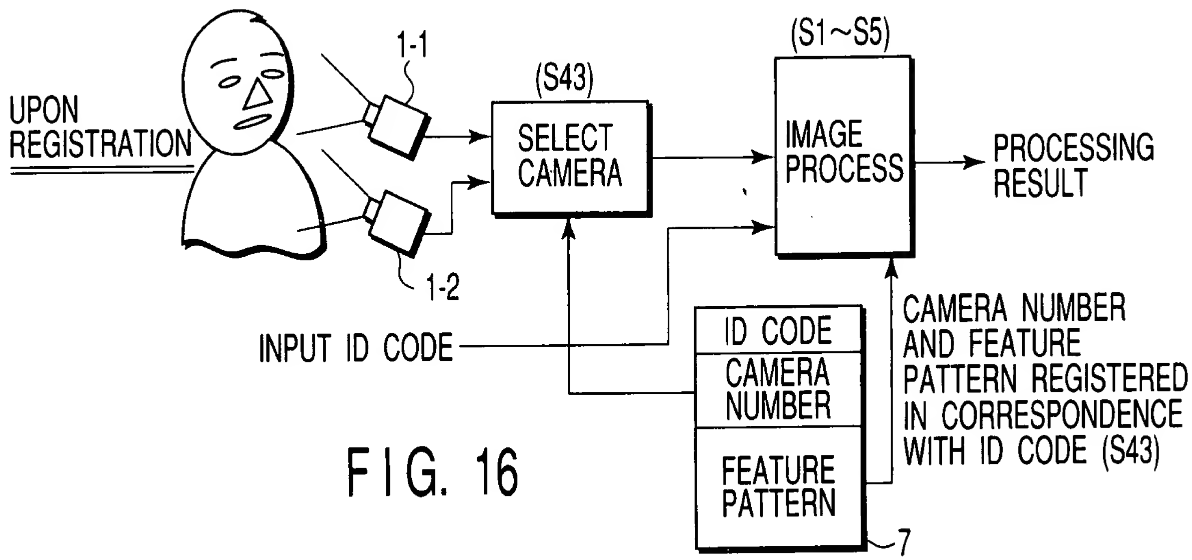


FIG. 16

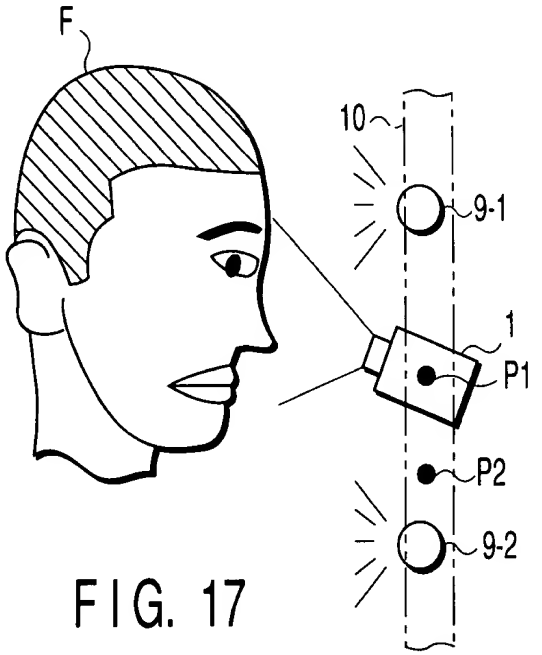


FIG. 17

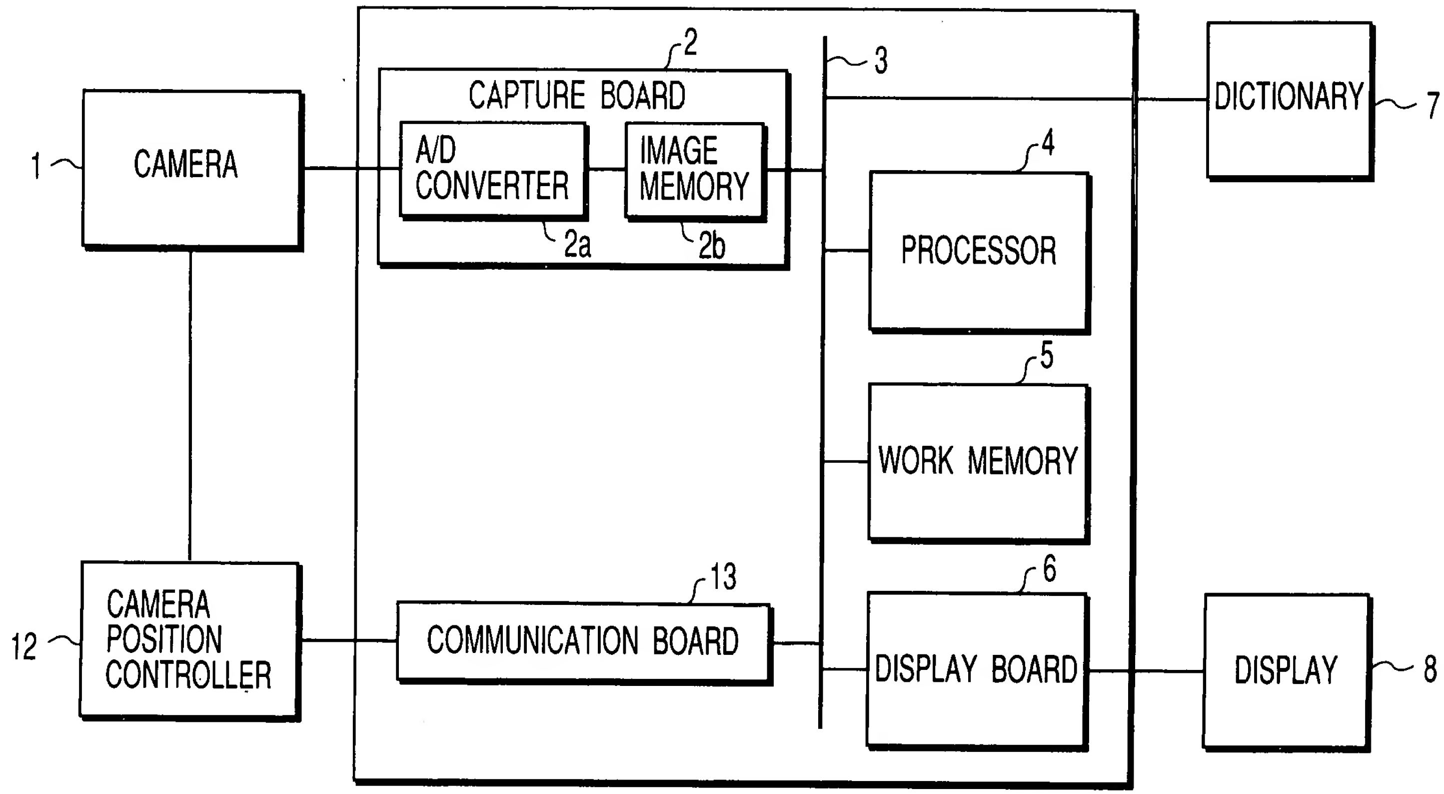

CAMERA
1
CAPTURE BOARD
2
A/D CONVERTER
2a
IMAGE MEMORY
2b
3
PROCESSOR
4
WORK MEMORY
5
DISPLAY BOARD
6
DICTIONARY
7
DISPLAY
8
CAMERA POSITION CONTROLLER
12
COMMUNICATION BOARD
13

FIG. 18

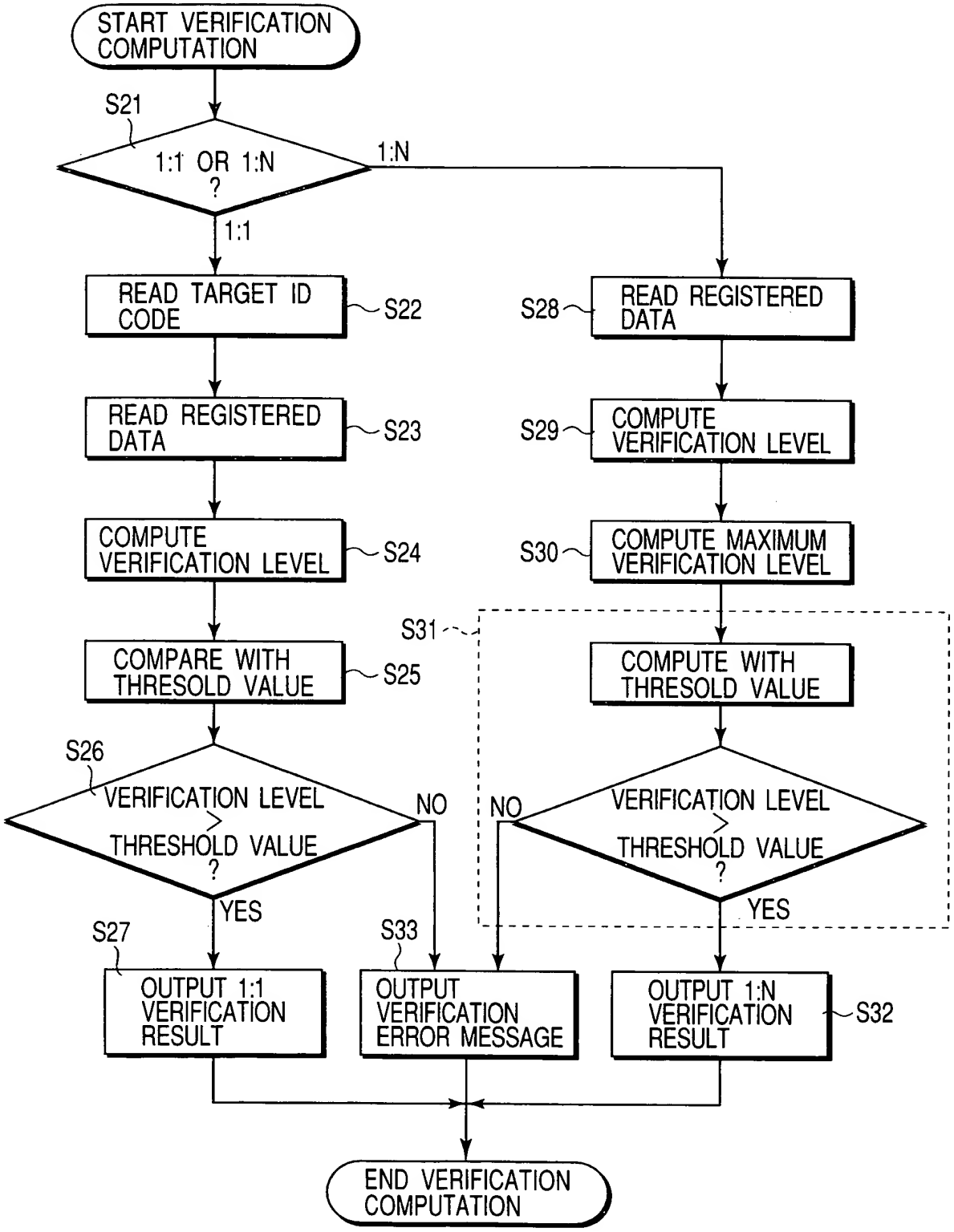

START VERIFICATION COMPUTATION
S21
1:1 OR 1:N ?
1:N
1:1
READ TARGET ID CODE
S22
READ REGISTERED DATA
S23
COMPUTE VERIFICATION LEVEL
S24
COMPARE WITH THRESOLD VALUE
S25
S26
VERIFICATION LEVEL > THRESHOLD VALUE ?
NO
YES
S27
OUTPUT 1:1 VERIFICATION RESULT
S28
READ REGISTERED DATA
S29
COMPUTE VERIFICATION LEVEL
S30
COMPUTE MAXIMUM VERIFICATION LEVEL
S31
COMPUTE WITH THRESOLD VALUE
NO
VERIFICATION LEVEL > THRESHOLD VALUE ?
YES
S33
OUTPUT VERIFICATION ERROR MESSAGE
OUTPUT 1:N VERIFICATION RESULT
S32
END VERIFICATION COMPUTATION

FIG. 19